

HOYA NEW



Oh There it is !

Figurine of fertility in Bada Valley, NW Sulawesi Is., Indonesia
Photo by Ted Green

What you may find when your out hunting for hoyas, yes and we found
hoyas.

A pdf publication devoted to the Genus
Hoya ISSN 2329-7336
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Editor:
Dale Kloppenburg

Contents

When a species is collected from the wild, I feel it is wise to identify it, propagate it and name it. In this way it will eventually get it into commercial channels, be distributed to all those interested in this genus and thus be preserved. If in the future the species is lost through natural causes or forest destruction it will still be here on earth in your collection.

The following new species are presented in PDF format with ISSN number.

1. ***Hoya rosarioae* Kloppenburg & Siar**
2. ***Hoya seanwhistleriana* Kloppenburg**
3. ***Hoya odorata* subsp. *taytayensis* Kloppenburg**
4. ***Hoya odorata* subsp. *antoinseae* Kloppenburg**
5. ***Hoya odorata* subsp. *garciae* Kloppenburg**
6. ***Hoya ofuensis* Kloppenburg**

NOTE: please see the Website publication of these species at “www.rare-hoyas.com”. Go to end and click on “publication” to access new species publications.

Hoya rosarioae Kloppenburg & Siar

ISSN 2329-7336

Collected by Dr. Simeona V. Siar 16 March 207 Catanduanes Data 8/4/07 Cluster of nine flowers in small zip bag. Named for Marylin Rosario, Los Banos, Laguna, Philippines

Hoya rosarioae Kloppenburg & Siar sp. nova. Typus 5268 (CAHUP) hic designatus similis *Hoya obscura* Elmer (Merrill) ex Burton Section *Otostemma* (Blume) Miquel, 1856 sed flores parvis, flaxidis 0.50 cm diametreo; pedunculi multis longus, usque ad 15 cm aut longior; pollinia multis brevia, differt. Marylin Rosario, Los Banos, Laguna, Philippines

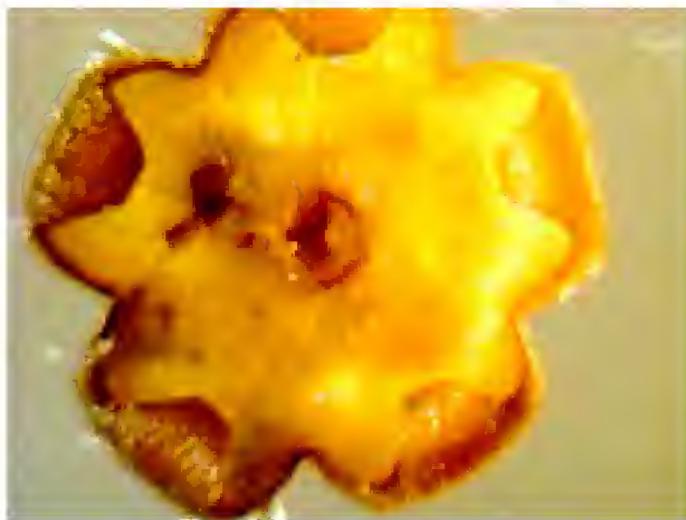
This new hoya species is similar to *Hoya obscura* but different, the flowers are smaller in diameter, flattened about 0.50 cm in diameter, the peduncles are much longer up to 15 cm or longer, and the pollinia are much shorter. A vine with milky sap.



Side view of the pedicel, calyx and ovary enlarged about 8x. Pedicels are curved of various lengths, forming a cluster of many flowers, terete, glabrous, 0.8 – 1.7 cm long and 0.08 cm in diameter. Calyx with sepals ovate 0.10 cm long and wide overlapped ca. $\frac{1}{2}$ way, ligules present. Do not come near corolla sinuses. Ovaries tapered columnar, glabrous. 0.13 cm tall and base pair 0.08 cm wide.



Side view of the underside of a flower with pedicel and calyx still attached enlarged about 8x. Corolla on underside glabrous, sepals are short sub-ovate, do not reach the corolla sinuses. corolla is revolute with turned under apices glabrous.



Underside of the revolute corolla enlarged about 8x.

| | |
|----------------|---------|
| Sinus – sinus | 0.28 cm |
| Sinus – center | 0.27 cm |
| Sinus – apex | 0.32 cm |
| Apex – center | 0.48 cm |
| Widest | 0.29 cm |



Side view of the flower enlarged about 8x. Corona sits in a shallow concave central portion of the corolla, upper side of corolla is pubescent, and revolute. Corona is skirted below (Section *Oreostemma* Schlechter). Inner lobes raised and narrow spatulate, outer lobes obtuse, thin, dorsal sub-concave with linear boss forward.



Inside surface of the corolla enlarged about 8x. Center has less indumentum than the other portions. There is a sub-thickened pentagonal area around the central collar.



Top view of the corona on the flower enlarged as above. Note the thin outer coronal lobes, with tapered rounder apex. The coronal lobes do not reach the corolla sinuses.

| | |
|---------------|---------|
| Apex – apex | 0.22 cm |
| Apex – center | 0.25 cm |
| Widest | 0.11 cm |
| Ret. – ret | 0.06 cm |
| Ret. – center | 0.07 cm |
| Aw. – aw. | 0.12 cm |
| Aw – center | 0.12 cm |



Bottom view of the corona enlarged about 16x. The lobes are skirted with the skirt interrupted at the anther wing area, lower edged are rounded, and extend outward (cupped) under the coronal lobe. Central column is prominent, with thickened sides 0.07 cm tall and as wide at the opening which hole the ovaries.



A enlarged side view of the coronal under side enlarged at least 16x. The rounded edged skirt shows with its attachment to the central underside of each coronal lobe and a ridge extending from the Anther wings between each pair of coronal lobes. Central prominent column is here darker color to the right center.

Page above pollinaria enlarged about 85x.



Pollinia

| | |
|--------|---------|
| length | 0.25 mm |
| widest | 0.10 mm |

Retinaculum

| | |
|----------|---------|
| length | 0.07 mm |
| shoulder | 0.03 mm |
| waist | 0.01 mm |
| hip | 0.03 mm |
| ext. | 0.03 mm |

Translators

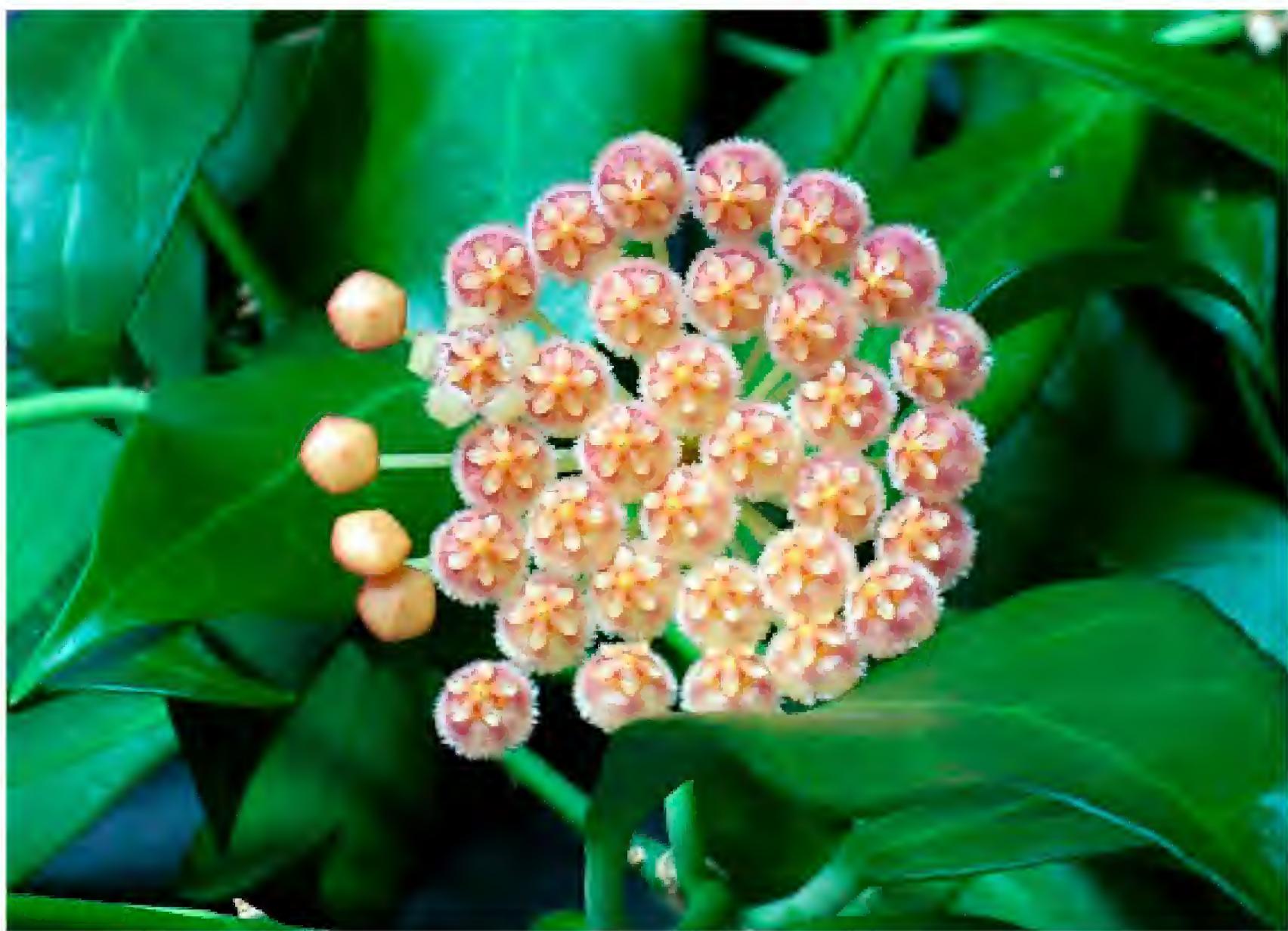
| | |
|--------|-----------------------|
| length | 0.14 mm bent L shaped |
| depth | 0.01 mm |

Caudicle

| | |
|------------|--|
| bulb diam. | 0.05 mm bell shaped to semicircular, clear. to slightly rough. |
|------------|--|



Picture via e-mail from Torill Nyhuus.



Hoya rosarioae Kloppenburg & Siar 2009
CAHUP #5268



Hoya seanwhistleriana Kloppenburg

ISSN 2329-7336

Hoya seanwhistleriana Kloppenburg sp. nova holotypus Whistler 10958 (PTBG) hic designatus. This species was collected by Art Whistler on Tutuila, Samoa 5 March 1988. Hoya, vine with milky white sap. Leaves ovate 7.5 - 9.5 cm long x 4.0 - 5.4 cm at the widest; tip shortly apiculate; base obtuse: dorsal surface glossy medium green, curved from the midrib, ventral surface more dull and lighter green. Pinnately veined, midrib protruding below, concave below. Corolla margins and especially the tip revolute. Corona elliptic, inner lobe short, dentate, outer apex narrowly rounded, dorsal surface concave, channeled below. One plant seen in the forest on Tuafanua Ridge behind the village of Vatia at 100 m. elevation. Another specimen was later collected on the same island Whistler 11596

In postulating that it is possible the species might be a hybrid but this will remain speculation until DNA and RNA analysis may be conducted in the future. In the meantime it is here designated as a new species. One possible parent species might be *Hoya australis* R. Brown, I found the foliage of the hybrid to be similar in shape, size, venation and coloration. "The type description of *Hoya australis* states that the corolla is glabrous with papillose margins", here the surface is pubescent. The Samoan Island subspecies of *Hoya australis* R. Br. have lighter green colored foliage than those subspecies found in Vanuatu and the Solomon Islands, and the leaf blade is usually smaller. The retinaculum of this (supposed) hybrid is smaller in most dimensions than the typical *H. australis* but the structure of the pollinia, particularly the expanded area without pollen in from the lower end of the pellucid margins (and the way the pellucid edge curves outward) is typical of the pollinia of *H. australis*. It must be mentioned that the retinaculum is large as in *H. australis* but the head here is not as long, leaving the shoulders higher up on the overall structure. From *Hoya australis* type description: "Here also the coronal lobes are not 2-keeled. Corona-segments expanded into concave (at first almost cup-shaped) horizontal spreading laminae, very obtuse or on the outer margin, the inner margin acuminate on incurved, the back prominently 2-keeled.

The other possible parent could be assumed to be **Hoya chlorantha* Rechinger. The corolla of this parent is cut well below the middle as is the hybrid. The coronal lobes are similar, and glabrous outside and finely pubescent inside as with our hybrid. The overall flower of *H. chlorantha* is smaller but one might expect hybrid vigor and enlarged flower parts in a hybrid. **This new hoyo species is named for Dr. Whistler's son.**

Details of the new species follow:

Internodes: long, terete, with finely puberulous, ca. 9 - 18 cm long, ca. 0.04 cm in diameter.

Petioles: terete, narrow 1.3 cm long, straight or curved, from slightly enlarged nodes.

Peduncle: nodal, straight, 2.5 cm long, 0.02 cm in diameter, slightly enlarged at apical end; with basal bracts at pedicel base, glabrous.

Pedicels: filiform, terete, glabrous, uniform 3.4 cm long, ca. 0.01 cm in diameter.



Pedicel and calyx: enlarged about 8x. Pedicel as mentioned above, with a few scattered hair cells, 0.03 cm long.

Calyx when pulled from corolla cups upward tightly, outside many stiff hair cells and on the bulbous base.



Top view of the open calyx enlarged about 8x. Sepals overlapped slightly at the base with prominent ligules at the sinuses, edges ciliate; some hair cells on this surface, 0.24 cm long; to the center 0.34 cm 0.18 cm at the widest. Apex obtuse.

Ovaries: domed 0.15 cm tall and wide at the base of the pair, glabrous.



Outside view of the corolla center, enlarged about 8x. This surface is glabrous with a raised collar from both surfaces. Edges of inner corolla surface turn under slightly at the sinuses. The radial vascular bundles are visible in pickled material.



Outer surface of the corolla at the sinus area enlarged about 8x. The outer surface is glabrous inside surface is pubescent, more dense on the outer edges.



Inside surface of the corolla enlarged about 8x. This surface is pubescent.

| | |
|----------------|---------|
| Sinus - sinus | 0.76 cm |
| Widest | 0.80 cm |
| Sinus - apex | 1.00 cm |
| Sinus - center | 0.60 cm |
| Apex - center | 1.35 cm |



Inside view of the corolla lobe and the adjacent coronal lobes enlarged about 8x. The surface is more pubescent from below the ends of the coronal lobes outward, puberulent inward except around the short collar where there are inward pointing stellate hairs. The coronal lobes do not reach the corolla sinuses.



Inside view of the corolla at the sinus area and adjacent coronal lobes enlarged about 8x. Again see the coronal lobes are short of reaching the corolla sinuses. The dorsal surface of coronal lobes are cupped especially in the channel down the center, with a linear raised umbo. The inner lobes are raised and relatively long and rounded; top sides and below are finely sulcate.



Top view of the corona enlarged about 8x. The surfaces are glabrous.

| | |
|---------------|---------|
| Apex - apex | 0.41 cm |
| Apex - center | 0.45 cm |
| Widest | 0.20 cm |
| Aw. - aw. | 0.23 cm |
| Ret. - ret. | 0.14 cm |
| Ret. - center | 0.10 cm |
| Ret. - aw. | 0.10 cm |



Bottom view of the corona enlarged about 8x. The lower side is channeled. There is a narrow lobe on each side starting just below the outer apex of the anther wing and extending to the outer apex which is emarginate (see the apex at the middle right) these surfaces are finely sulcate. The groove extends in from the sinus toward the central thin column with hair cells on surfaces, opening 0.16×0.13 cm ca. 0.05 cm tall. The apex of the anther wing is squared off.



Pollinarium enlarged about 82x.

Pollinia

| | |
|--------|---------|
| length | 0.65 mm |
| widest | 0.24 mm |

Retinaculum

| | |
|-----------|-------------------|
| length | 0.23 mm to crotch |
| shoulder | 0.19 mm |
| waist | 0.13 mm |
| hip | 0.18 mm |
| extension | 0.13 mm |

Translator

| | |
|--------|---------|
| length | 0.26 mm |
| depth | 0.02 mm |

Caudicle

| | |
|------------|---------|
| bulb diam. | 0.06 mm |
|------------|---------|

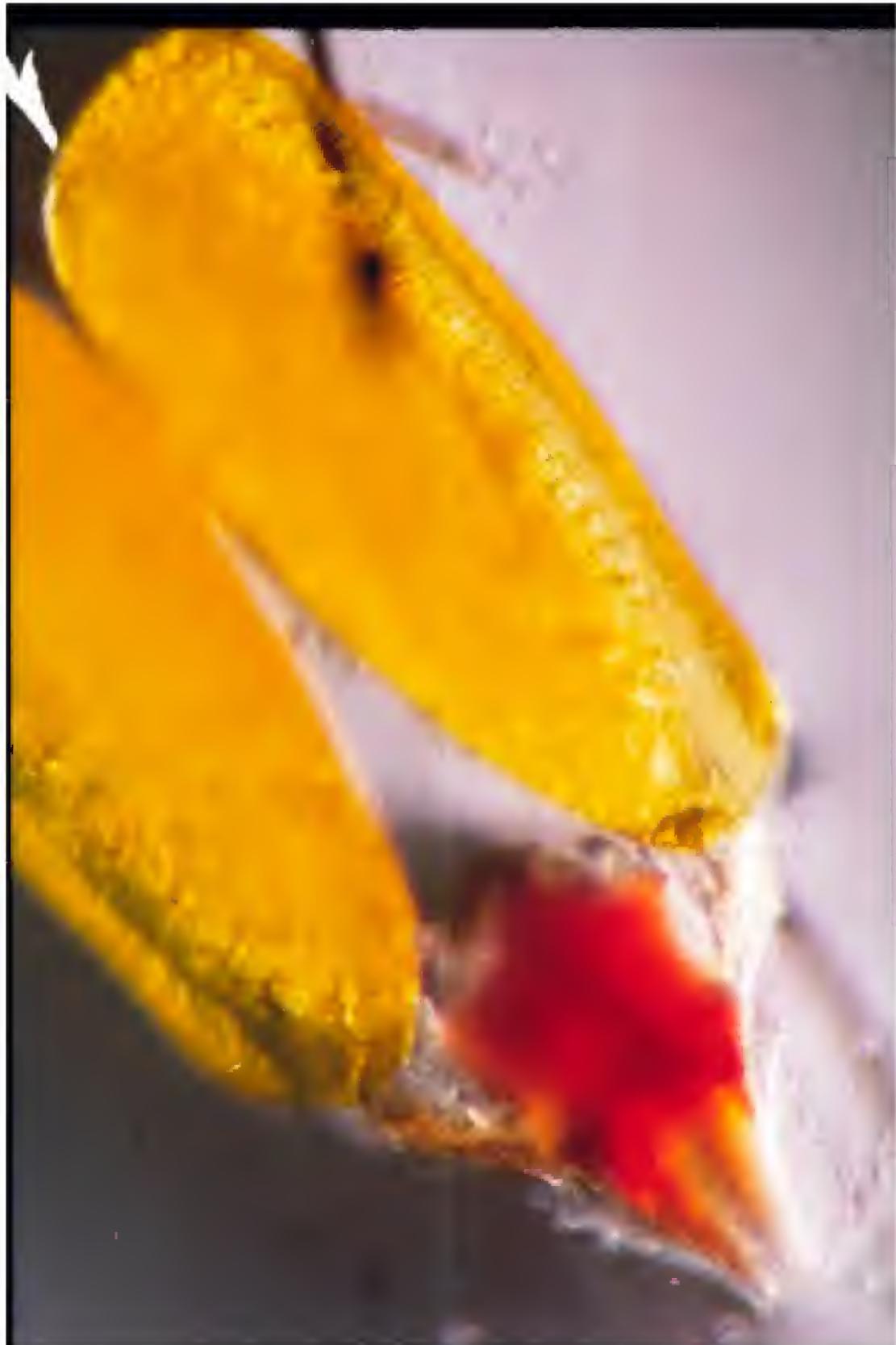
Bulb clear.



More detailed photo of the lower pollinia area and the small caudicles and short translator arms along with the retinaculum, enlarged as above. There is a wide vacuole on the inner end of the pollinia. a small clear bulbous caudicle supported by narrow up curved short translator arms.

Translator/caudicle type: ls/o

Pollinia inner end type: R (round)



containing a small forward umbo. The inner lobes could most likely be classified as spatulate, although much rounded and they do not reach the center.



Side view of a coronal scale enlarged about 8x. Anther wings are shallowly scythe shaped and with a definite column supporting the scale, The inner lobe is raise but anthers are exposed, outer apex is obtuse.

Pollinarium enlarged about 165x. Mostly to show the fine grained pollen, the wide vacuole near the inner apex of the pollinia, and the narrow translators. The retinaculum has distinct long extensions, broad shoulder and hip area.

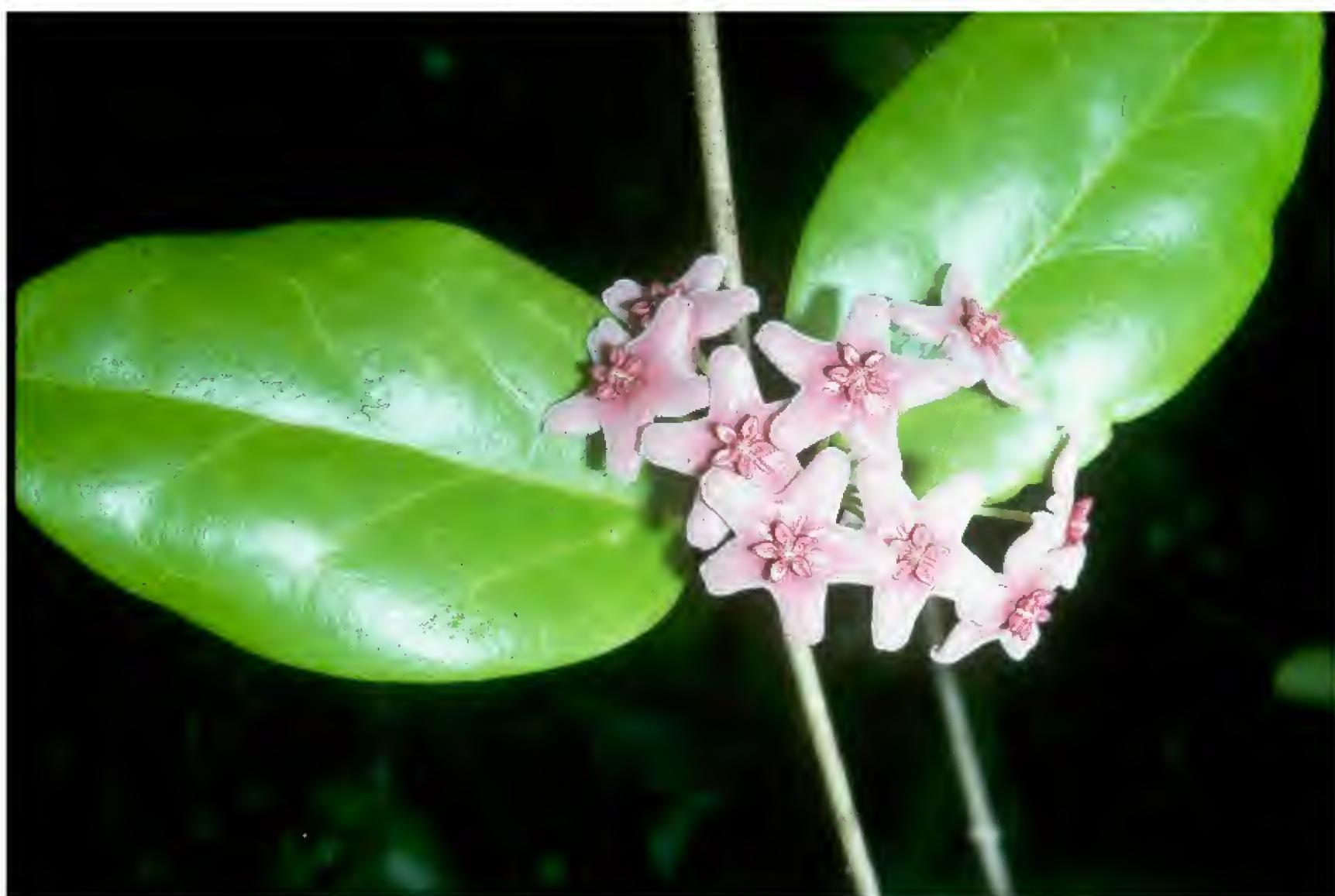


Top view of the corona with 2 scales removed to expose the pentagonal stylar table which is raised in the center with the apex typically slightly divided and mealy. Note the dorsal surface of the lobe to the upper left that shows the channeled concavity with a long ridge down the center

Leaves: opposite, petiolate, glabrous ovate-elliptic, base obtuse, apex acute-shortly apiculate, 7.5 - 9.5 cm long, x 4.0 - 5.4 cm at the widest; Pinnately veined, midrib protruding below, surface curved from midrib above, concave below with edges turned under. Glossy medium green above, more dull and lighter green below.

A photo of this hoyo species taken by Dr. Art Whistler:

About 9 flowers per cluster.



A reduced copy of the Type Sheet 10958 (PTBG)



Hoya odorata subsp. taytayensis Kloppenburg
ISSN 2329-7336

Hoya odorata subsp. taytayensis Kloppenburg subsp. nova holotypus 6706 (PNH) hic designatus. Similis sp. sed habitat ad 324 m infernos elevation, et foliis grandior 6.7 - 12 cm x 2.8-4.3 cm contrastre 3.5-5 cm longis 1.3-2.2 cm latis, differt.

This subspecies was collected by E. G. Edano at Lake Balinsasayao, Taytay, Negros Orient, Philippines Sept. 7, 1948, elevation 976 meters. A much lower elevation than the type species by 324 meters, and the leaves here are much larger and the apices not as apiculately pronounced and the corolla diameter flattened is a little larger among other differences including the sessile pedicels.

See details below:

Stem: woody, soft but flexible, subterete, glabrous. Internodes 4-8+/- cm long, glabrous.

Leaf: 6.7 - 12 cm x 2.8-4.3 cm, glabrous, opposite, pinnate reticulate nervation, base narrowing, apex apiculate, edges entire.

Petiole: 0.4 – 0.8 cm long, glabrous, gland not prominent, possibly grooved.

Rachis: with circular bracts at base of pedicel.

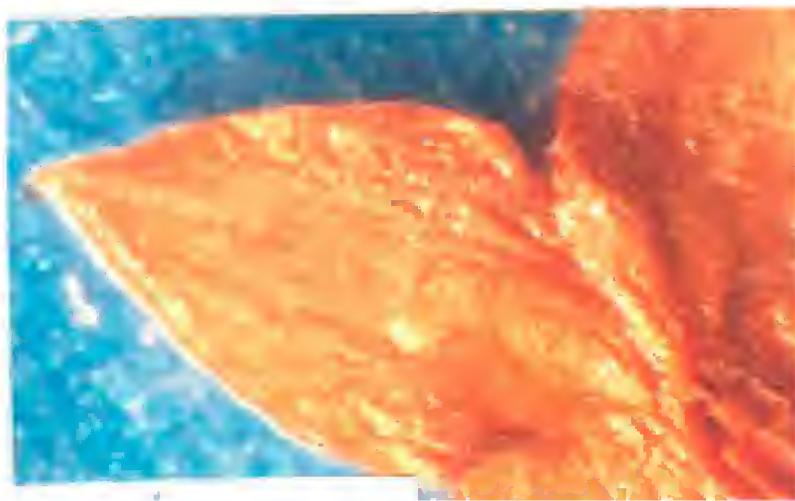
Pedicel: sessile.



Outside surface of the corolla, this surface is granulate-glabrous.

| | |
|----------------|---------|
| Sinus – sinus | 0.45 cm |
| Sinus – center | 0.25 cm |
| Sinus – apex | 0.60 cm |
| Apex – center | 0.88 cm |
| Widest | 0.54 cm |

Collar is 0.05 cm tall, opening 0.15 cm in diameter, base diam. 0.20 cm



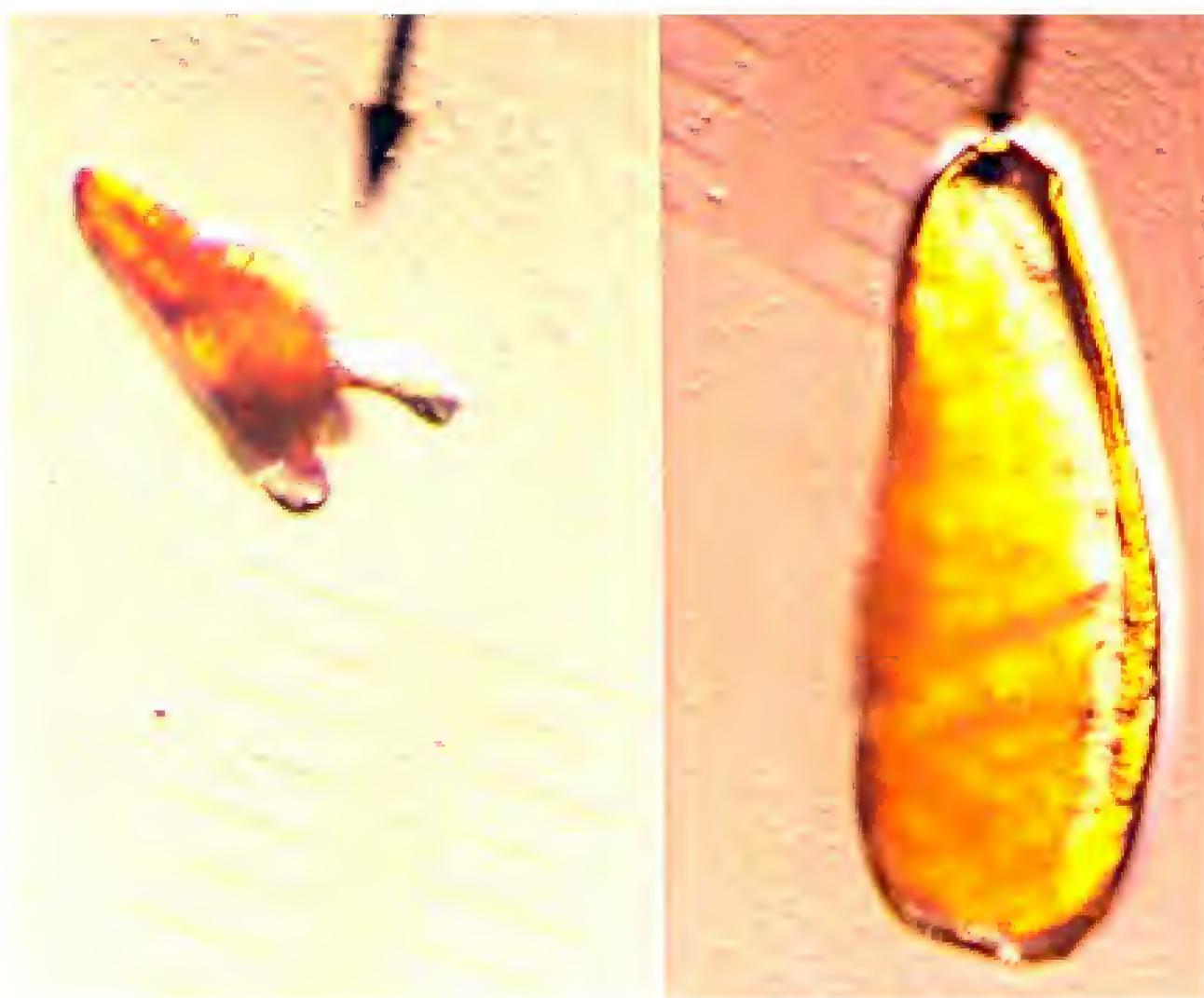
Inside surface of the corolla, surface is papillate, lobes are deeply cut, broadest above the sinuses.



Side view of a coronal scale. Inner lobe is raised and spatulate, dorsal very short, outer apex obtuse, surfaces glabrous. Anther wings prominent and scythe shaped. Scale plump, channeled below.

Left retinaculum turned on one side

Right pollinium inner apex pointing down.



Pollinium
length 0.65 mm
widest 0.24 mm

Retinaculum
length 0.34 mm
total.

Pollinia inner ends round.

Reduced copy of the herbarium sheet PNH 6706



The sheet at (BO) 6705 reduced copy



Hoya odorata subsp. antoinsensis Kloppenburg

ISSN 2329-7336

Hoya odorata subsp. antoinsensis Kloppenburg, holotypus 19549 (PNH) hic designatus. Similis sp. sed flori grandior, diametro complanatus 2.04 cm contrastre 1.7 cm et dorsalis pagina dense pubens non dimidio inferiore subinconspicue farinoso-papillosa et foliis grandior 8.2 – 11 cm x 3 – 4 cm contrastre 3.5-5 cm longis infra medium 1.3-2.2 cm, differt.

The subspecies is similar to the species but with some stark differences, the corolla flattened is much larger 2.04 cm versus 1.7 cm, even though the collector says “tiny whitish flower” also the dorsal surface of the corolla here is densely pubescent in contrast to the species which has a somewhat inconspicuous mealy-papillose surface and the foliage is much larger 8.2-11 cm long and 3-4 cm at the widest compared to 3.5-5 cm x 1.3-3.2 cm. There are enough differences to constitute a new species however I have determined the similarities with the species are close so as to make is a subspecies, which I did. The species was collected by B. B. Britton, Talinas, Antoins of Negros, Oriental, Philippines. 5 Sept. 1953. North slope forest, elevation 1300 meters. Tiny whitish flower. Originally labeled as *Centrostemma multiflora* (Bl.) Decaisne, roll 134.

Details follow:

Leaves: 8.2 – 11 cm x 3 – 4 cm, glabrous, ovate, base narrowing, apex apiculate,

Petiole: 0.5 – 0.7 cm x 0.1 cm in diameter, glabrous, grooved above.

Peduncle: 0.3 cm sessile, glabrous.

Rachis: small glabrous.



Outside surface of the corolla. lobes are deeply cut, surface glabrous, central collar thickened and raised out from surface.

| | |
|----------------|---------|
| Sinus – sinus | 0.38 cm |
| Sinus – center | 0.33 cm |
| sinus – apex | 0.80 cm |
| Apex – center | 1.02 cm |



Inner surface of the corolla, surface is densely pubescent, especially around crown. Coronal lobes nearly reach the sinuses of the deeply cut lobes.



Top view of a flower enlarged about 16x. The coronal lobes do not reach the corolla sinuses, outer lobes obtuse. Inner lobes spatulate and overlap in the center. Glabrous.

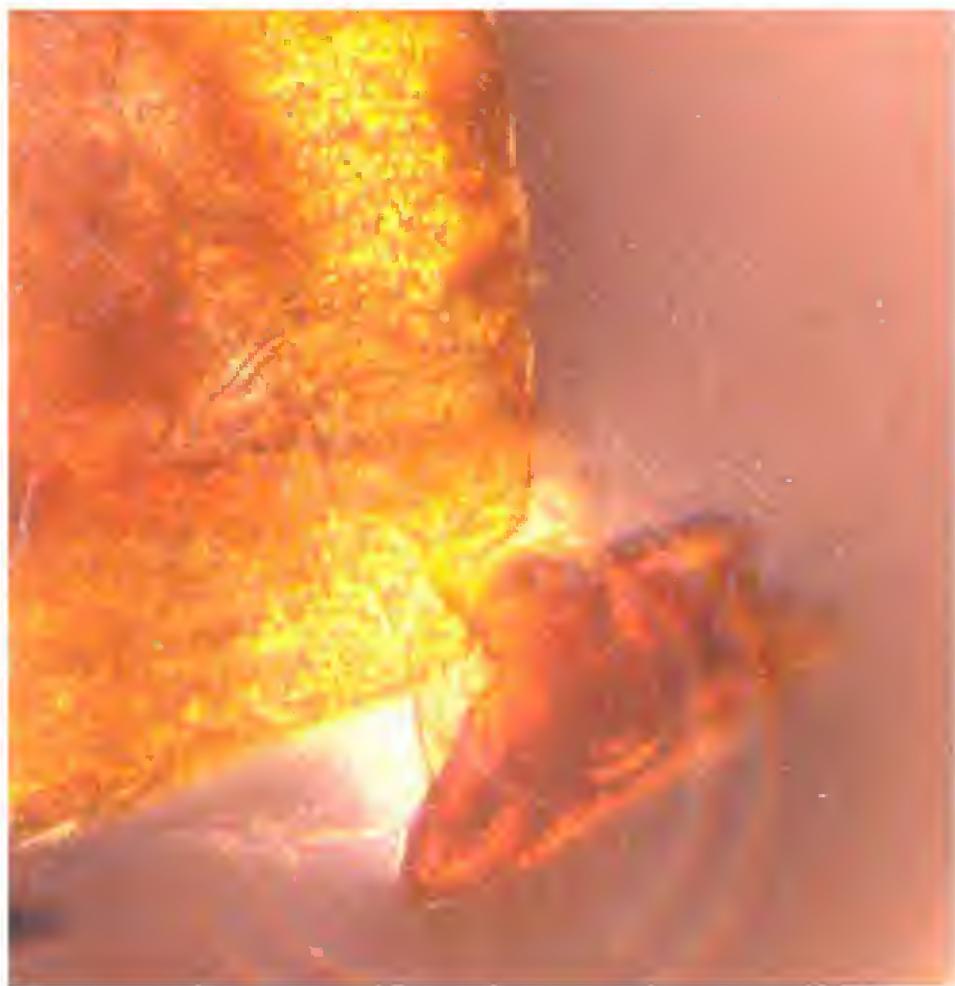
Apex – apex 0.30 cm
Widest 0.13 cm



Pollinarium. Both pollinia have germinated, retinaculum has twisted laying on side.

Pollinia
length 0.75 mm ca.
widest 0.18 mm

Retinaculum
length 0.25 mm

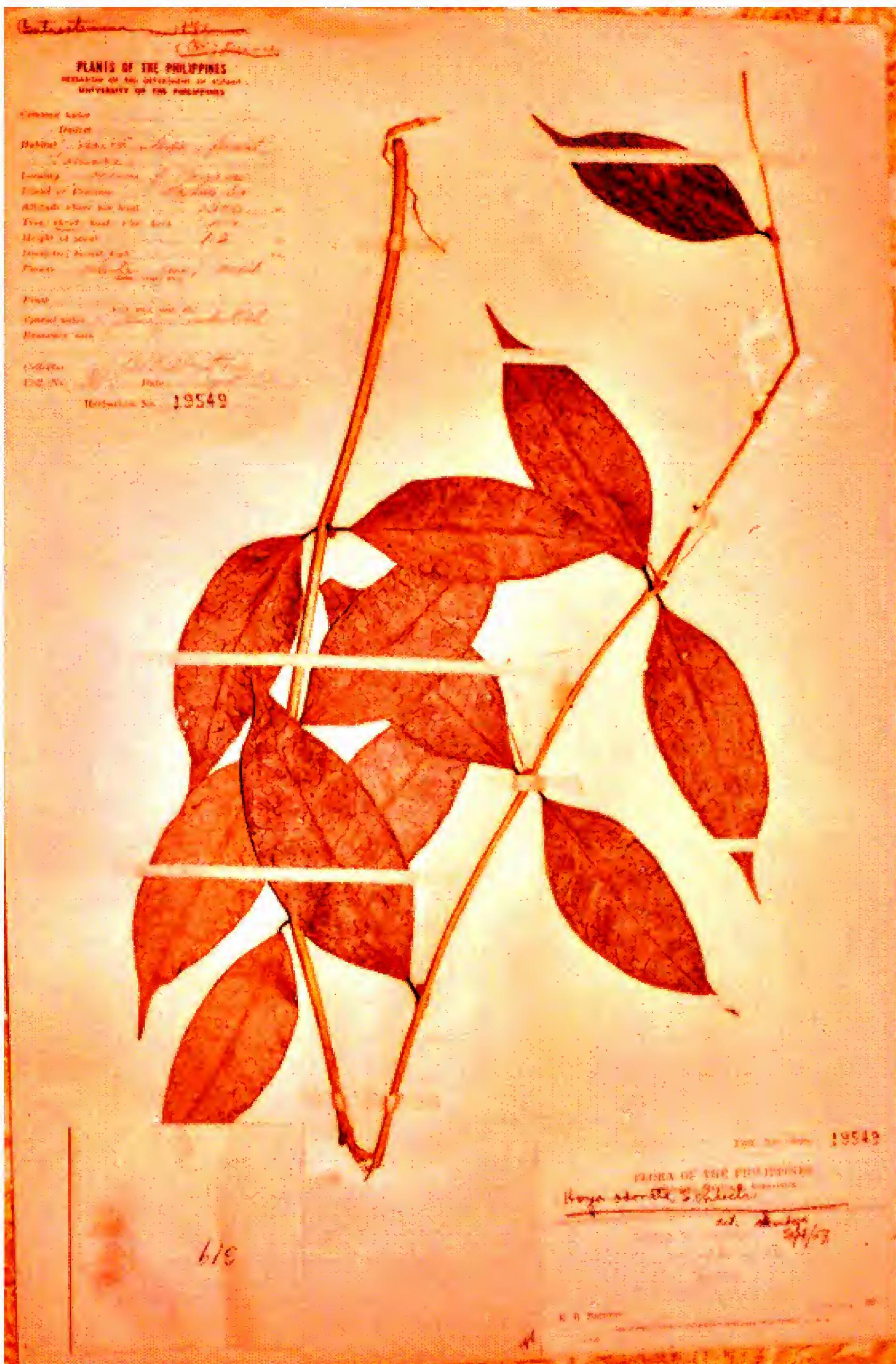


Another photo of the pollinarium. Best I could do with this sheet.

As far as I can determine this is similar to other *H. odorata* pollinarium.

The inner coronal lobes overlapping are not typical of this species, nor are the obtuse outer lobes. The flower here is a little smaller also.

A reduced copy of the Type sheet below:



***Hoya odorata* subsp. *garciae* Kloppenburg**

ISSN 2329-7336

Hoya odorata* subspecies *garciae Kloppenburg subsp. nova, holotypus 1024 (PNH) hic designatus. Similis sp. sed calyces segmentis triangularis non lanceolato-oblongis obtusis et coronae lobis brevior 0.24 cm contrastre 0.4 cm, et corolla diametro complinatus 2.06 cm contrastre 1.7 cm, differt.

Thus subspecies differs from the species in having triangular sepals not lanceolate-oblong obtuse and the corona lobes are smaller 0.24 cm versus 0.04 cm and the corolla flattened is larger 2.06 cm in contrast to 1.7 cm. The specimen was Collected by R. F. Garcia, at Negros Orient., Sibalan, Kabalinan, Mt. Gintaban on volcanic soil, a shrub, with white sap, leaf dark green above paler below, in primary forest, mossy, flower white, peduncle reddish.

Details follow:



Side view of the calyx enlarged about 8x.

Calyx: sepals triangular, edges ciliate, thickened in center, edges hyaline dark.



Back of flower with pedicel attached enlarged about 8x.

Pedicel: 2 cm long, curved, dark 0.05 cm in diameter.

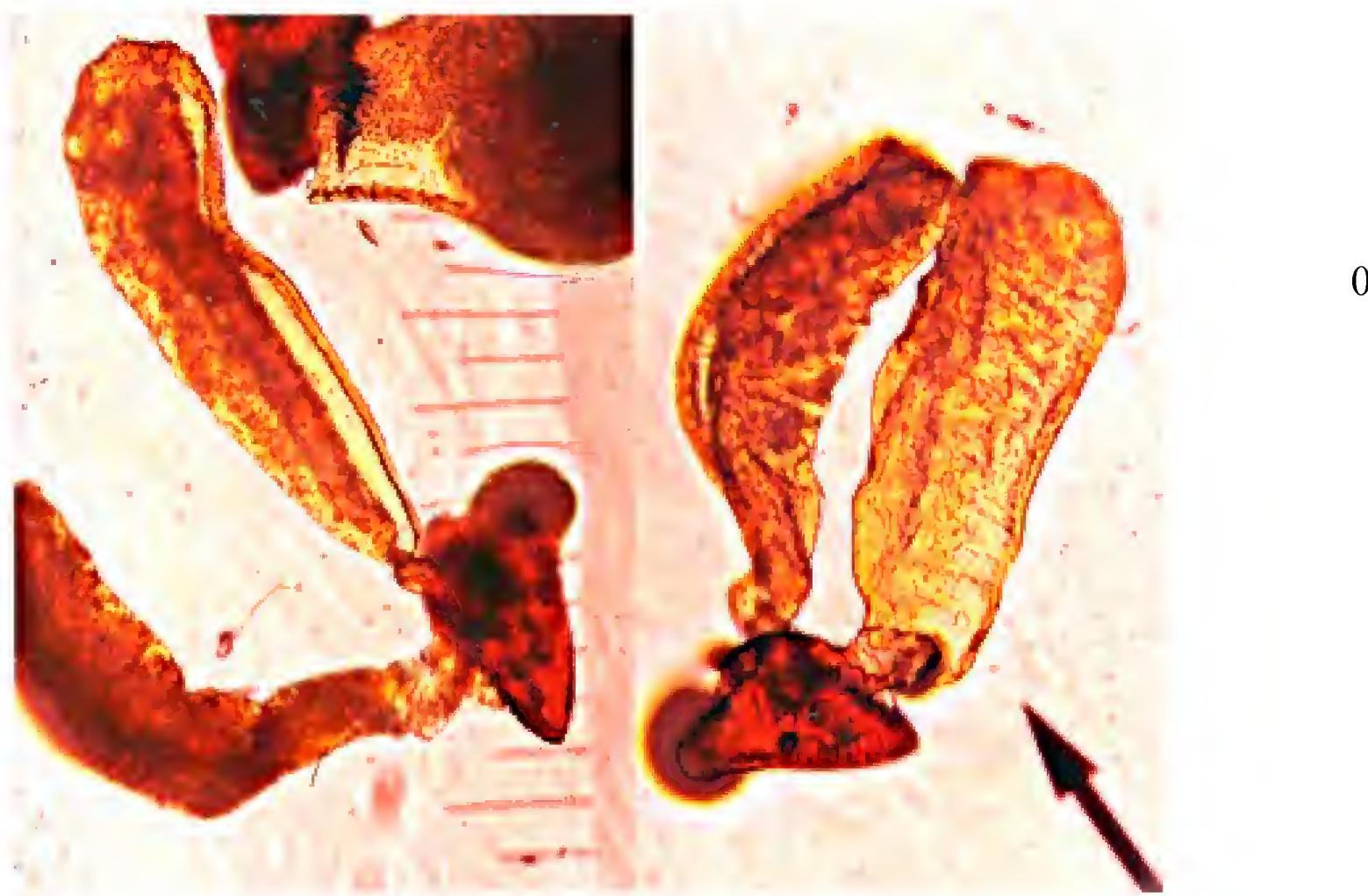


Two photos of the flower inside enlarged about 8x. Corolla is deeply cut, glabrous outside, finely puberulent inside. Hirsute under the corona.

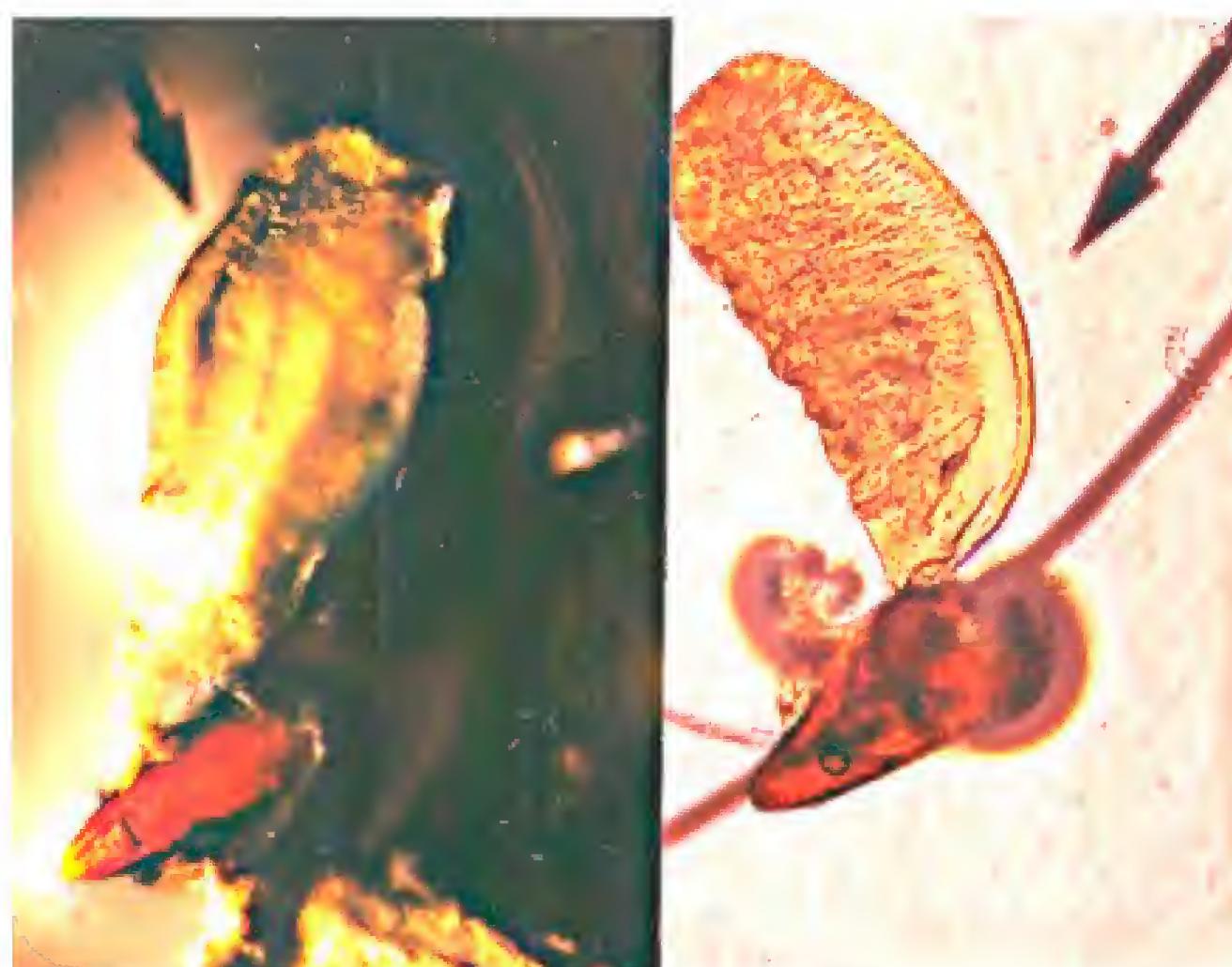
| | |
|----------------|---------|
| Sinus – sinus | 0.42 cm |
| Sinus – center | 0.42 cm |
| Sinus – apex | 0.71 cm |
| Apex – center | 1.03 cm |
| Widest | 0.45 cm |

Corona inner lobes spatulate raised but not covering center, anthers exceeding, dorsal sway backed, outer lobes curved up obtuse, all glabrous.

| | |
|---------------|-------------------------------|
| Apex – apex | 0.24 cm |
| Apex – center | 0.37 cm |
| Widest | 0.13 cm |
| Aw. – aw | 0.13 cm turn under at sinuses |



Two photos of pollinaria enlarged about 80x. for some reason they are withered and deformed, unusual for this structure.



Another photo with different results, pollinium on right looks distorted but one on left appears normal. Very difficult to determine precise or accurate measurements.

Best determination is:

Pollinaria

| | |
|--------|---------|
| length | 0.71 mm |
| widest | 0.25 mm |

Retinaculum

| | |
|----------|---------|
| length | 0.20 mm |
| shoulder | 0.07 mm |
| waist | 0.05 mm |
| hip | 0.06 mm |
| ext. | 0.08 mm |

Translators

| | |
|--------|---------|
| length | 0.07 mm |
| depth | 0.02 mm |

Caudicle

| | |
|------------|---------|
| bulb diam. | 0.05 mm |
|------------|---------|

Translator/caudicle type: ls/o

Pollinia inner end type: R

Hoya ofuensis Kloppenburg

Hoya ofuensis Kloppenburg sp. nova. Holotypus 8798 (HAW) hic designatus. Section Physostelma (Wall.) Schlechter. Affinis *Hoya whistlerii* Kloppenburg sed, flores parvior, corolla diametro complanatus 1.70 cm contrastre 2.40 cm, coronae lobus angustissimus 0.13 cm contrastre 0.20 cm, dorsaliter naviculiformis differt.

This sp is similar to *Hoya whistlerii* Kloppenburg but the flowers are smaller, here the corolla flattened is 1.70 cm versus 2.40 cm and the lobes of the corona are also more narrow 0.13 cm versus 0.20 cm also here they are keeled down the center, among other differences.

Detailed measurements of parts follow:



Pedicel attached to the corolla enlarged about 8x, terete, glabrous, 2.23 cm long, light yellow-buff, 0.05 cm in diameter, with slight curve.



Pedicel and calyx with ovaries enlarged about 8x. Calyx is small, ciliate, does not even reach half way to the corolla sinuses, centrally thickened, surface glabrous, overlapped at the base with possibly one large ligule inside. Ovaries short domed 0.12 mm. tall and base pair 0.11 cm wide, surface glabrous.

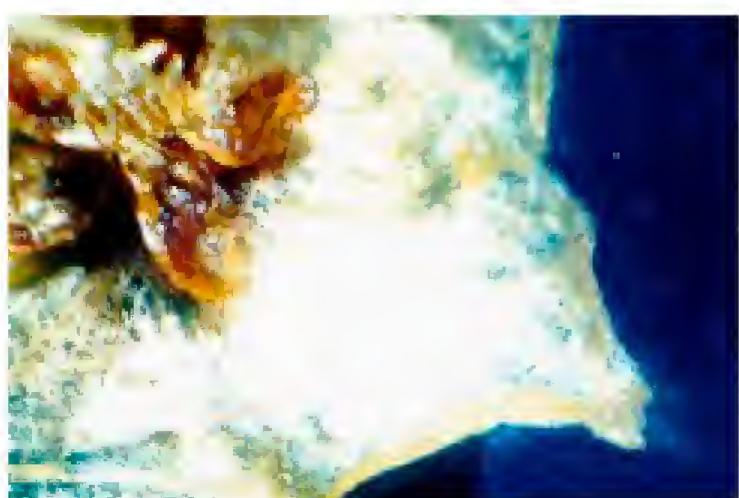


Corolla outside surface (ventral) enlarged about 8x. Corolla broad not deeply cut glabrous on this surface, lobes triangular broadest just above the sinuses with small conduplicate lobes curved under, apex acute. Central collar darker color, raised 0.06 cm opening 0.05 cm x 0.08 cm, inside, walls thickened, glabrous.



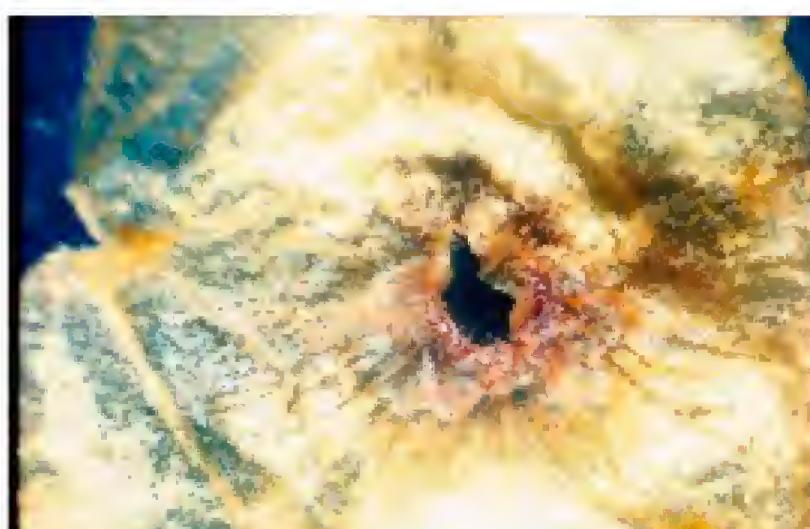
Flower inside view (dorsal) enlarged about 8x. Corolla surface is puberulous, glabrous under the coronal area.

| | |
|----------------|---------|
| Sinus - sinus | 0.55 cm |
| Sinus - center | 0.43 cm |
| Sinus - apex | 0.60 cm |
| Apex - center | 0.85 cm |
| Widest | 0.62 cm |



Flower flattened is 1.70 cm in diameter. Flower inside at the corolla lobe apex enlarged about 8x. Center of corona is upright, glabrous, inner lobes are spatulate, long and narrow, outer apex rounded, dorsal somewhat concave and apparently keeled along the center, anthers extend equal the inner lobe but exposed.

| | |
|---------------|---------|
| Apex - apex | 0.30 cm |
| Apex - center | 0.32 cm |
| Widest | 0.13 cm |
| Ret. - ret. | 0.09 cm |



Corolla inside view enlarged about 8x. There are stellate hairs inward below the coronal center. Center darker color, slightly raised and thickened.



Lower view of the corona enlarged about 8x. Lobe centers are grooved all the way to the central column, which is thick, fluted, 0.05 cm tall.



Top-side view of a coronal scale enlarged at least 16x. Note the long inner lobe and the extended anther, dorsal sway backed and slightly concave with wide central ridge, edges are sharp, the outer lobe rounded, anther wings not deeply curved. Portion of column to left below.



Pollinarium enlarged about 165x. (one pollinia missing).

Pollinium

| | |
|--------|----------|
| length | 0.56 mm. |
| widest | 0.26 mm. |

Retinaculum

| | |
|------------|----------|
| length | 0.27 mm. |
| shoulder | 0.16 mm. |
| waist | 0.05 mm. |
| hip | 0.10 mm. |
| extensions | 0.03 mm. |

Translator

| | |
|--------|----------|
| length | 0.18 mm. |
| depth | 0.04 mm. |

Caudicle bulb (very large, clear)
diameter 0.18 mm.

The clear caudicle can be seen as a light area on the left upper side of the retinaculum and covering the lower portion of the pollinium, it is also squared off slightly on the left at the end of the translator.

Translator/caudicle type: ls/o

Pollinia inner end type: R

Description of the herbarium sheet below:

8798 Vine with white flowers and milky sap, occasionally in the forest east of the microwave tower on Mt. Tumu, 450 m Ofu, Samoa. 1 stem 3 leaves at 4 nodes, 1 peduncle 5 flowers, 5 Flowers in the envelope. Leaves small broadly ovate attenuate, base rounded, midrib fine protruding on bottom, pinnate obscure nervation, 4.5 - 6.5 cm long x 2.5 - 2.6 cm at widest. Petioles thin 1.5 cm, long, do not appear to be grooved above. Internodes 9-12 cm long, terete, glabrous, nodes enlarged. Peduncles straight, glabrous, 3.6 cm long. Pedicels straight, glabrous, 2.3 cm long, filiform. Calyx small, does not reach the corolla sinuses.

Copy of the type sheet reduced:

